REMARKS/ARGUMENTS

Favorable consideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-7 and 9-19 are presently pending in this application, Claims 1, 4, 14 and 15 having been amended, and Claims 16-19 having been newly added by the present amendment.

In the outstanding Office Action, the drawings were objected to because of informalities; Claims 14 and 15 were rejected under 35 U.S.C. §112, first paragraph, as containing subject matter not enabling to one skilled in the relevant art; Claims 1-3, 9 and 14 were rejected under 35 U.S.C. §102(b) as being anticipated by Eickelmann (U.S. Patent 4,472,063); and Claims 4-7 and 10-15 were rejected under 35 U.S.C. §103(a) as being unpatentable over Grylls et al. (U.S. Patent 4,188,407) in view of Okamoto et al. (U.S. Patent 5,382,092).

Claims 1, 4, 14 and 15 have been amended herein. These claim amendments are believed to find clear support in the claims, specification, and drawings as originally filed.[1] Also, newly added Claims 16-19 are believed to be supported by the original disclosure of the present application.[2] Hence, no new matter is believed to be added thereby.

With regard to the objection to the drawings and the rejection under 35 U.S.C. §112, first paragraph, it is respectfully submitted that the subject matters recited in Claims 14 and 15 find clear support in the original disclosure. Specifically, "at least one vertically surfaced paddle blade" recited in Claims 14 and 15 is supported by, for example, Figs. 1 and 2 illustrating the paddle blades 5a, 5b, and the specification, page 6, lines 19-26. Therefore, Claims 14 and 15 are believed to be in compliance with the requirements of the statute. If,

[1] See, for example, Specification, Figs. 1, 2 and 4.
[2] See id.

however, the Examiner disagrees, the Examiner is invited to telephone the undersigned who will be happy to work in a joint effort to derive mutually satisfactory solution.

Before addressing the outstanding art rejections, a brief summary of Claim 1 is believed to be helpful. Claim 1 as currently amended is directed to a stirred tank for storing a part of yeast slurry discharged from fermentation tanks where beer is fermented, and then returning the part of yeast slurry to the fermentation tanks for reuse, and the stirred tank includes a stirring impeller made up of vertically oriented surfaces with no slanting surface and positioned within the stirred tank and so constructed that a maximum diameter of a rotation body defined by the rotation of the stirring impeller is 60-90% of the inner diameter of the stirred tank, and the height of the rotation body is 70% or more of a depth of the part of yeast slurry stored in the stirred tank. By providing such a stirring impeller, the rotation of the vertically oriented surfaces causes the yeast slurry to flow in a radially outward direction not only in the proximity of the bottom wall and the top surface, but also in the residual region upon, thereby more effectively stirring the yeast slurry. In addition, compared to a helical blade having slanting and curved surfaces, the vertically oriented surfaces with no slanting surface are significantly less likely to cause blind spots during cleaning operation, thus avoiding microbial contamination more effectively.[3]

Eickelmann discloses a mixer implement for liquids. Nevertheless, Eickelmann fails to teach "a stirring impeller *made up of vertically oriented surfaces with no slanting surface* and positioned within the stirred tank and so constructed that a maximum diameter of a rotation body defined by the rotation of the stirring impeller is 60-90% of the inner diameter of the stirred tank, and the height of the rotation body is 70% or more of a depth of the part of yeast slurry stored in the stirred tank" as recited in amended Claim 1 (emphasis added in

[3] See Specification, page 12, lines 11-12.

Italic). On the contrary, Eickelmann discloses a mixer including helically formed impeller blades, not vertically oriented surfaces with no slanting surface. These helical blades cause a specific flow pattern, in which fluid sent upward along the side wall of the tank is sucked downwardly along the axial center of the tank, sent downwardly and then into a proximity of the bottom portion of the tank. As such, the Eickelmann apparatus is believed to be less efficient in stirring the fluid. In addition, with regard to the measurement of Figure 2 stated in the Office Action, the diameter of the impeller has been measured by Applicants as about 58% of the inner diameter of the tank. Furthermore, unless described otherwise in the specification, the drawings are not believed to represent the exact size and shape of the impeller or the tank, and Eickelmann discloses no numerical values with respect to the diameter of these components. It is therefore respectfully submitted that Eickelmann does not teach or even suggest the stirring impeller as recited in Claim 1. Therefore, the structure recited in Claim 1 is clearly distinguishable from Eickelmann, and thus is not anticipated by or obvious from Eickelmann.

Turning now to Claim 4, amended Claim 4 is directed to a method of manufacturing beer including the process of storing in a stirred tank a part of yeast slurry discharged from fermentation tanks where beer is fermented, and then returning the part of yeast slurry from the stirred tank to the fermentation tanks for reuse, and the method includes providing a stirring impeller made up of vertically oriented surfaces with no slanting surface and positioned within the stirred tank and so constructed that a maximum diameter of a rotation body defined by the rotation of the stirring impeller is 60-90% of the inner diameter of the stirred tank, and the height of the rotation body is 70% or more of a depth of the part of yeast slurry stored in the stirred tank, and stirring the yeast slurry by rotating the stirring impeller at

a rotational speed of 1-30 rpm. By providing such a stirring impeller, the yeast slurry flows in a radially outward direction and is more effectively stirred.

Okamoto et al. and Grylls et al. disclose a mixing apparatus and processes for producing active dried yeast, respectively. However, neither Okamoto et al. nor Grylls et al. are believed to teach "*providing a stirring impeller made up of vertically oriented surfaces with no slanting surface* and positioned within the stirred tank and so constructed that a maximum diameter of a rotation body defined by the rotation of the stirring impeller is 60-90% of the inner diameter of the stirred tank, and the height of the rotation body is 70% or more of a depth of the part of yeast slurry stored in the stirred tank" as recited in amended Claim 4 (emphasis added in Italic). Instead, Okamoto et al. merely disclose a mixing apparatus including a helical ribbon blade,[4] and Grylls et al. simply disclose a process for drying moist yeast particles by using a mechanical disintegrator such as blades, rods or bars.[5] Therefore, the process recited in Claim 4 is believed to be clearly distinguishable from Okamoto et al. and Grylls et al.

Because none of Eickelmann, Okamoto et al. and Grylls et al. discloses the stirring impeller as recited in Claim 1 or the providing step as recited in Claim 4, even the combined teachings of these cited references are not believed to render the subject matter recited in Claim 1 or 4 obvious.

Likewise, Claims 14 and 15 are believed to include subject matter substantially similar to what is recited in Claim 1 or 4 to the extent discussed above. Thus, Claims 14 and 15 are also distinguishable from Eickelmann, Okamoto et al. and Grylls et al.

Furthermore, Applicants respectfully submit that none of Eickelmann, Okamoto et al. and Grylls et al. teaches "a stirring impeller *including vertically flat surfaced paddle blades*

[4] See Okamoto et al., Abstract.
[5] See Grylls et al., column 5, lines 12-15.

with no slanting surface, the stirring impeller being positioned within the stirred tank and so constructed that a maximum diameter of a rotation body defined by the rotation of the stirring impeller is 60-90% of the inner diameter of the stirred tank, and the height of the rotation body is 70% or more of a depth of the part of yeast slurry stored in the stirred tank" as recited in Claim 18 (emphasis added in Italic) nor "*providing a stirring impeller including vertically flat surfaced paddle blades with no slanting surface*, the stirring impeller being positioned within the stirred tank and so constructed that a maximum diameter of a rotation body defined by the rotation of the stirring impeller is 60-90% of the inner diameter of the stirred tank, and the height of the rotation body is 70% or more of a depth of the part of yeast slurry stored in the stirred tank" as recited in amended Claim 19 (emphasis added in Italic). Therefore, the subject matters recited in Claims 18 and 19 are believed to be distinguishable from Eickelmann, Okamoto et al. and Grylls et al. and thus is not anticipated by or obvious from Eickelmann, Okamoto et al. and Grylls et al.

For the foregoing reasons, Claims 1, 4, 14, 15, 18 and 19 are believed to be allowable. Furthermore, since Claims 2, 3, 5-7, 9-13, 16 and 17 depend directly or indirectly from either Claims 1 or 4, substantially the same arguments set forth above also apply to these dependent claims. Hence, Claims 2, 3, 5-7, 9-13, 16 and 17 are believed to be allowable as well.

In view of the amendments and discussions presented above, Applicants respectfully submit that the present application is in condition for allowance, and an early action favorable to that effect is earnestly solicited.

Respectfully submitted,

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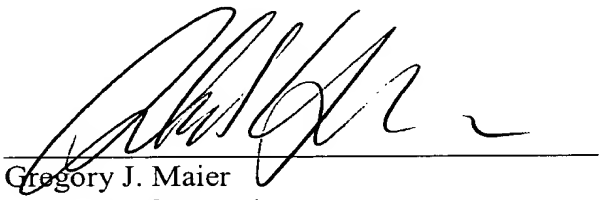

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